Session 1A: Puget Sound Regional Synthesis Model

Questions & Answers

Q: I am curious, how is the public going to learn from this? The theme this morning was that we need to learn how to communicate to the general public of findings. I'm just wondering if some of this will be available to organizations, to consult with, and learn from— for instance the ESA listing. Is that going to be palatable to the public? Are people going to have problems with that? How are you going to answer those questions—not just to the academic community or to the officials who may ask—but how's that going to get out to the public?

Miles G Logsdon—A: Great question. Basically, how is any of this going to become useful to anybody, or is it going to reside in the nice academic tower that we love to work in? How do we plan beyond just doing this to actually get it out there? Everybody that is in PRISM will have their own answer, but I have the microphone. So, each of the projects…first key to this is to realize that it's a huge disciplinary project at a university, which has its own problems of bureaucracy and outreach programs and everything else. PRISM uniquely has tried to get itself together…get us into one kind of organized project and who do have a element of PRISM that wasn't presented here, which is the Center for Environmental Visualization or center to distribute the output of PRISM. I had a brief slide here, and I didn't go through with it. I think it might help at least give you a vision of how we think it might work. The models that you have seen all had different time frames and space frames, but they hold one thing in common, that is, the focus is on Puget Sound and a physical spatially explicit description of their work. That data is all in the same geographic reference frame so everything talks to each other in space and hopefully in time. Right now, we are using the web first of all on just a descriptive way that almost everyone in this room uses the web, we put up web pages.

The second way that we are migrating to right now is at the website we are going to be using what are called dynamic pages or learning center and that is where the pages are dynamically built. Each time you come there you'll have news items. You'll have output. You'll have conferences. You'll have whatever is current available at pages that are dynamically built. That's not particularly new web technology, but is new for an academic project to always put itself right out there. This is what our model says today. Ken and hydrometeorology are the first people to have what we considered near real-time data on the web, and you can go look at some of that now. Mitsuhiro's circulation model will be the next. The rest of us are lagging behind and we will get there. But the point is that we will be using the web and this kind of near real-time approach.

The third thing is, this idea of real-time data available all the time. You go to this website, and you will actually have what we say through some interface the virtual Puget Sound. It will be available right then. The idea is that there will be a query, an expert system querying tool that could even the near-English language queries. You won't have to know SQL and other things like that. To do that, we have to be able to make all of our data models built into one database design and that's the computer science issue.

So, we're growing. First, we are using the web descriptively, secondly, we're using a dynamic page-building environment and thirdly, we will be using it as an actual model interface. So, I wanted to give you a very practical that's what we're doing. Wrapped around all of that, you have all the issues of how people learn, how decision-makers make decisions, and how best go get the information out. We don't know the answers to those questions. We have played with different ideas of decision-making tools and we just don't know the answers.

Q: What's going on in PRISM around coastal hazards?

A: This is great. They don't give us enough time on all of this. I did want to have the opportunity to answer that. One of the parts that I hope you noticed about this from Ken's talk, you've got a couple in between the atmosphere and the land surface processes, and a routing down to the shoreline. You have interactions in the human environment on that low path and then the water, if you will, dumps into Puget Sound. There's

no nearshore actions; there's no coastal processes represented in these models. We do have a nearshore PRISM team that has built is coming together right now and we will have a graduate student working on a hydrodynamics model with Mitsuhiro and others on the nearshore processes. We have a group that is going to work with Dave Montgomery and others on the landslide hazards risk on the coastal system. The plan is to work at beginning a 10-year resolution on the coastal part of Puget Sound, and as I said this morning, the big issue that they will address first is nearshore bathymetry. We hope we're one of the first people to work out the LIDAR data and as I told you this morning about the work of getting the bathymetry data to match the USGS datum. Just try to figure out to get LIDAR to lay in the same datum as USGS. So the first thing is to build a physical template on the nearshore starting 10-meter.

Q: Do you have information on biological communities and habitat?

A: Mitsuhiro was only able to briefly mention the work of Jan Newton and others on a biogeochemical food web model, specifically aquatic, and that project is about a year old now and it's now definitely past the modeling box wire diagram and into writing code right now. Also Mitsuhiro and Jan, you'll find some really good work on data mining of what exists out there in natural observations data sets for ocean biological communities and things like that. On the land side, specifically in habitat, we're not too much different than anyone else except perhaps we're trying to organize it. First of all, starting with the physical template approach, it's land cover from satellite near-photo and an inventory system using a single classification system to a multitude of classification systems. I'd say that's okay, but it's not great. The second one it to match that classification system up with the ones you know about, the SSHIAP databases and others like that and make those naming systems match and we have done a little bit but not enough. In all honesty, I'd say that PRISM would not be my first place to look for habitat naming systems right now. Land-cover change, yes, putting assemblages, plant assemblages, species assemblages with that, no.

Q: Are you going to look at erosion in the watershed sedimentation?

A: Great. You are speaking about the sediment transport model. Right now, it's not really there. But the point for the group that whenever you take something like this, you have to decide how best to maximize the modeling effort and we've looked at this and we really think the idea of focusing on the nearshore modeling is a place where we will see the most benefit from working with sediment transport model. That's where you really have a forcing that you have to have that right, and we think that's probably the place you'll see the most benefit from doing that work.

Q: How will you characterize more the marine environment and more physical structures that we see there?

A: As our attempt to characterize the Puget Sound circulation, the bathymetry issue and what point observations you can make, the objective is really not characterization there, it is really the prime choice on the model. When we moved into finer resolution where those things are what you really have to get right, it's the nearshore that we come out with. I would make a point though. Mitsuhiro didn't give you one detail and Ken didn't make this point either, and that was that in these atmospheric models, they are actually looking at 44 different layers in the atmospheric part of it and the ocean you are at 14. So it's not just this like ocean atmosphere model, it's 40+ atmospheres 14+ oceans and that kind of thing. It's a complex numeric model.